

AMENDMENTS TO THE CLAIMS:

This listing of claims replaces all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A controller comprising:

a control circuit comprising a closed loop circuit, the closed loop circuit comprising:

an input;

an output;

a forward path coupled to the input and ~~and~~ to the output;

a feedback path coupled to the ~~output and to the~~ input and to the output;

and

a sensor having a sensitivity, which is the sensor being in the forward path

or in the feedback path, the sensor for generating a sensor signal;

an error signal generator that is external to the closed loop circuit, the error signal
generator to generate an error signal and to provide the error signal to the ~~control~~ closed loop
circuit such that the error signal is incorporated into a useful ~~applied to a signal on the forward~~
path of the ~~control~~ closed loop circuit, wherein the error signal is predetermined, the closed loop
circuit being and wherein the error signal generator is external to the control circuit, wherein the
forward path is configured to generate an output signal at an output of the closed loop circuit, the
output signal being based on the sensor signal and the error signal, the output signal being sent
along the feedback path to the input of the control circuit forward path; and

a detector configured to detect a change in the sensitivity of the sensor, which is the detector being coupled to the forward path, to obtain an intermediate signal from the forward path between the input and the output, the detector for generating to generate a control signal based on the intermediate signal;

wherein the forward path comprises a control device, which is coupled to the output input, to limit the an output signal at the output to a predetermined value, the detector ~~for~~ controlling to control the control device using the control signal.

2. (Currently Amended) The controller of claim 1, wherein the detector comprises:
a storage device to store a measurement signal; and
a comparator to compare the an intermediate signal to the measurement signal and to output a comparator signal, the intermediate signal being stored in the storage device.

3. (Previously Presented) The controller of claim 2, wherein the detector further comprises:
decision logic to receive the comparator signal and to control the control device in accordance with the comparator signal.

4. (Previously Presented) The controller of claim 1, wherein the control device comprises a clamp circuit.

5. (Previously Presented) The controller of claim 2, wherein the comparator comprises at least one of a signal level comparator and a signal sign comparator.

6. (Previously Presented) The controller of claim 1, further comprising:
a time signal generator to generate a time signal output, wherein the error signal generator is configured to generate the error signal based on the time signal output.

7. (Previously Presented) The controller of claim 1, wherein the sensor comprises a magnetoresistive sensor.

8. (Currently Amended) A method of operating a controller comprised of:
a control circuit comprising a closed loop circuit, the closed loop circuit comprising:

an input;

an output;

a forward path ~~that includes an~~ coupled to the input and ~~an~~ to the output;

a feedback path coupled to the ~~output and to the~~ input and to the output;

and

a sensor having a sensitivity, which is the sensor being in the forward path

or in the feedback path, the sensor generating a sensor signal, the forward path generating an output signal based on the sensor signal, the output signal being applied to the input of the forward path via the feedback path;

wherein the method comprises:

generating an error signal that is predetermined, the error signal being generated outside the closed loop circuit forward path and the feedback path;

~~applying incorporating~~ the error signal into a useful signal of the closed loop circuit to a signal on the forward path between the input and the output;

obtaining a measurement signal from the closed loop circuit, the measurement signal an intermediate signal from the forward path between the input and the output, the intermediate signal being obtained using a detector that is coupled to the closed loop circuit forward path;

~~generating a comparison signal by comparing the intermediate signal to a stored measurement signal;~~

generating a control signal that is indicative of a change in sensitivity of the sensor, the control signal being based on the comparison of the measurement signal and a stored signal; and

applying the control signal to a control device in the closed loop circuit forward path, the control device being coupled to the output input, and the control device limiting the an output signal at the output to a predetermined value in response to the control signal.

9. (Currently Amended) The method of claim 8, wherein the measurement signal is stored in a storage device, and ~~comparing the comparison~~ is performed using a comparator.

10. (Currently Amended) The method of claim 8, wherein the control signal is generated via decision logic, the decision logic being controlled by an output signal from the comparator ~~the comparison signal~~, the decision logic generating the control signal if a predetermined criterion is satisfied.

11. (Previously Presented) The method of claim 9, wherein the comparator comprises at least one of a signal sign comparator and a signal level comparator.

12. (Currently Amended) The method of claim 10, wherein the error signal is generated based on an output of a time signal generator and an output of the decision logic; and wherein the ~~intermediate~~ measurement signal is based on both the sensor signal and the error signal.

13. (Previously Presented) The method of claim 1, wherein the control signal comprise a signal output of the detector.

14. (Previously Presented) The controller of claim 1, wherein the sensor generates the sensor signal based on one or more input signals applied to the input of the forward path.

15. (Previously Presented) The method of claim 8, wherein the sensor generates the sensor signal based on one or more input signals applied to the input of the forward path.

16. (Currently Amended) A controller comprising:

a ~~control~~ closed loop circuit comprising:

an input;

an output;

a forward path coupled to the input and ~~and~~ to the output;

a feedback path coupled to the ~~output and to the~~ input and to the output;

and

a sensor having a sensitivity, which is the sensor being in the forward path or in the feedback path, the sensor for generating a sensor signal, ~~based on an input signal applied to the input, wherein the forward path is configured to generate an output signal based on the sensor signal, the output signal being sent along the sensor signal being converted into a feedback signal and being applied to the input via~~ the feedback path ~~to the input of the forward path~~;

an error signal generator to generate an error signal and to provide the error signal to the ~~control~~ closed loop circuit such that the error signal is incorporated into a useful signal ~~applied to a signal on the forward path of the closed loop control circuit~~, wherein the error signal is predetermined and wherein the error signal generator is external to the control circuit, ~~wherein the forward path is configured to generate an output signal based on the sensor signal and the error signal, the output signal being sent along the feedback path to the input of the forward path~~;

a detector, which is coupled to the closed loop circuit forward path, the detector being configured to detect a change in sensitivity of the sensor ~~obtain an intermediate signal from the~~

~~forward path between the input and the output~~, the detector ~~for generating to generate~~ a control signal based on the change in sensitivity of the sensor using the intermediate signal;

wherein the forward path closed loop control circuit further comprises a control device, ~~which is the control device being~~ coupled to the output input, to limit ~~the an~~ output signal at the output to a predetermined value, the ~~detector for controlling the~~ control device using being controlled by the control signal.

17. (Currently Amended) The controller of claim 16, wherein the detector comprises:
a storage device to store a measurement signal; and
a comparator to compare ~~the intermediate~~ a stored signal to the measurement signal and to output a comparator signal.

18. (Previously Presented) The controller of claim 17, wherein the detector further comprises:

decision logic to receive the comparator signal and to control the control device in accordance with the comparator signal.

19. (Previously Presented) The controller of claim 16, wherein the control device comprises a clamp circuit.

20. (Previously Presented) The controller of claim 17, wherein the comparator comprises at least one of a signal level comparator and a signal sign comparator.